

Lesson 3.2.2 Monday 12/12(3-78 → 3-84)

$$3-78) a) \frac{x^2-8x+16}{3x^2-10x-8} = \frac{(x-4)(x-4)}{(3x+2)(x-4)} = \frac{x-4}{3x+2}$$

$$A.C = \begin{array}{r} -24 \\ -12 \quad 2 \end{array} \quad (3x^2-12x)(2x-8) \quad \begin{array}{l} 3x+2=0 \\ x \neq -2/3 \end{array} \quad \begin{array}{l} x-4=0 \\ x \neq 4 \end{array}$$

$$3x(x-4)+2(x-4)$$

$$b) \frac{10x+25}{2x^2-x-15} - \frac{5(2x+5)}{(2x+5)(x-3)} = \frac{5}{x-3}$$

$$A.C = \begin{array}{r} -30 \\ -6 \quad 5 \end{array} \quad \begin{array}{l} 2x^2-6x+5x-15 \\ 2x(x-3)+5(x-3) \end{array} \quad \begin{array}{l} x \neq 3 \\ x = -5/2 \end{array}$$

$$c) \frac{(k-4)(2k+1)}{5(2k+1)} \div \frac{(k-3)(k-4)}{10(k-3)} = \frac{(k-4)(2k+1)}{5(2k+1)} \cdot \frac{10(k-3)}{(k-3)(k-4)}$$

$$= 2 \quad k \neq 3 \quad k \neq 4 \quad k \neq -\frac{1}{2}$$

$$3-79) a) \begin{array}{r} 4x+3 \\ -3x \\ \hline x+3=3 \\ -3-3 \\ \hline x=0 \end{array} \quad | \text{ solution}$$

$$b) \begin{array}{r} 3(x-4) - x = 5+2x \\ 3x-12-x = 5+2x \\ 2x-12 = 5+2x \\ -2x \quad \quad -2x \\ \hline -12 \neq 5 \end{array} \quad \text{No solutions}$$

$$c) (5x-2)(x+4) = 0 \quad \neq \text{ solutions}$$

$$\begin{array}{r} 5x-2=0 \\ +2+2 \\ \hline 5x=2 \\ \frac{5x}{5} = \frac{2}{5} \\ x = .4 \end{array} \quad x = -4$$

$$d) x^2-4x+4 = (x-2)(x-2) \quad x=2 \quad | \text{ solution}$$

$$3-80) 4000x - 8000 = 16000$$

a) divide by 4000 so $x - 2 = 4$

b) $x - 2 = 4$ and $4000x - 8000 = 16000$
 $+2 +2$ $+8000 +8000$
 $x = 6$

$$\frac{4000x}{4000} = \frac{24000}{4000}$$

$$x = 6$$

c) $\frac{x \cdot 100}{100} + \frac{3 \cdot 100}{100} = \frac{8 \cdot 100}{100}$ multiply by 100
 $x + 3 = 8$
 $-3 -3$
 $x = 5$

3-81) a) $5 + 3x < 5$
 $-5 -5$

$$\frac{3x}{3} < \frac{0}{3}$$

$$x < 0$$

b) $-3x \geq 8 - x$
 $+x +x$

$$\frac{-2x}{-2} \geq \frac{8}{-2}$$

$$x \leq -4$$

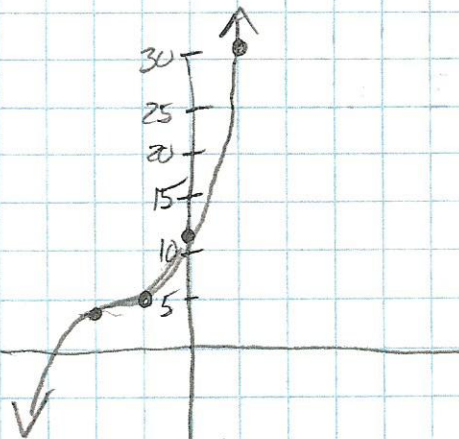
3-82) a) $\frac{2}{3} \cdot \frac{9^3}{14^3} = \frac{3}{7}$

b) $\frac{3}{5} \div \frac{12}{25} = \frac{3}{5} \cdot \frac{25}{12} = \frac{5}{4}$

3-83) $y = (x+2)^3 + 4$

pt of inflection @
 $(-2, 4)$

shifted up 4 and
to the left 2



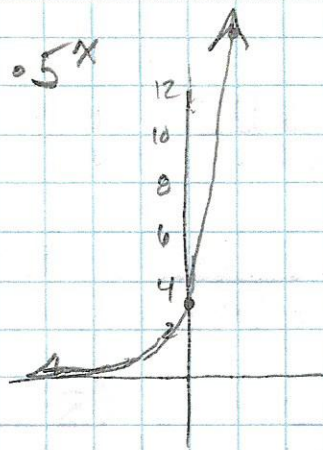
x	y
0	12
-1	5
-2	4
1	31

b) $y = (x+2)(x+2)(x+2) + 4 = (x^2 + 4x + 4)(x+2) + 4$
 $= x^3 + 4x^2 + 4x + 2x^2 + 8x + 8 + 4$
 $= x^3 + 6x^2 + 12x + 12$

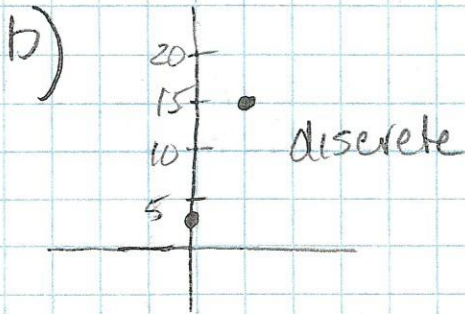
c) It would not differ

3-84) $f(x) = 3 \cdot 5^x$

x	y
0	3
1	15
2	75
-1	$3/5 = .6$



a) Domain: All real numbers



c) $f(x)$ is a continuous function with range $y > 0$ while $t(n)$ is a discrete series with positive integer inputs

Tue/Wed 12/9 and 12/10 (3.2.3 } 3.2.4 3-102-109)

3-102) a) Because if $x=4$ then the denominator is zero. Since dividing by zero makes the expression undefined $x \neq 4$

b)

$$\frac{x}{3x+1} + \frac{2x^2-2}{(x-5)(3x+1)} \quad ; \quad \frac{9-3x}{(x+3)(x-3)} + \frac{2x}{x+3}$$

$x \neq -1/3$
 $x \neq 5$

$x \neq 3$
 $x \neq -3$

c)

$$\frac{1}{(x+6)(3x-1)}$$